



October 3, 2002

***** ADDENDUM *** ADDENDUM *** ADDENDUM *****

SOLICITATION: JG3036
DUE DATE: 10/22/02
TIME: 2:00PM
DESCRIPTION: Heavy Duty Truck with Snow Blower Attachment

ADDENDUM #2

The following are to be added or changed to the specifications for this bid:

- 1.** Please disregard the first set of specifications dated July 5, 2002. The attached specifications dated October 2, 2002 will replace this first set and will take precedence.
- 2.** The new **due date** will be **October 22, 2002 at 2:00pm**.
- 3.** If you have submitted a bid prior to receipt of this addendum, a revised bid may be sent to the Division of Purchasing. The bid with the most current date received will be considered.
- 4.** With procurement process questions contact Jared Gardner (801) 538-3342.

*****END OF ADDENDUM*****

To acknowledge receipt of addendum, include a copy of this addendum with BID submittal or give written acknowledgement with the BID. It shall be the responsibility of the bidder to appropriately disseminate this information to all concerned prior to the assigned bid time.

Company Name

Signature

Date

SPECIFICATIONS FOR THE PURCHASE OF ONE EACH HEAVY DUTY TRUCK WITH SNOW BLOWER ATTACHMENT, ON A FOUR WHEEL STEERING CHASSIS. FOR USE IN HIGHWAY SNOW REMOVAL. THIS SNOW-BLOWER WILL BE USED IN GRADES UP TO 18% AND REQUIRES PERFORMANCE TO REMAIN CONSTANT.

*Bid Identification Bidder*_____

*Make/Model quoted*_____

GENERAL SPECIFICATIONS

The truck chassis with snow blower attachment shall be new and of current model. The equipment shall meet the following minimum specifications, but is not limited as to features furnished by the manufacturer. The equipment shall have all standard features. The equipment shall be delivered assembled, serviced, tested and ready to operate.

Equipment furnished to the State of Utah must meet current state and federal safety regulations.

Bid to STATE terms of warranty, or include a copy of standard warranty. All warranty periods shall start when the equipment has been put into service at U.D.O.T. Basic warranty shall include an agreement to allow all U.D.O.T. shops, using U.D.O.T. labor, to be approved to complete "In-house" warranty repairs in U.D.O.T. shops. The warranty shall include reimbursement for parts, and labor.

Bid must have a response to each item of the specifications. Use spaces provided and attach additional sheets, if required.

Bid response *See attached*_____

Engine - two (2) year

*Auxiliary Engine - two (2) year*_____

Hydraulics - one (1) year

Drive Train - one (1) year

*Blower Head - one (1) year*_____

*Items covered*_____ *Duration*_____

Liquidated Damages:

The vendor agrees to delivery of item as quoted in this bid. Failure, to deliver as quoted, constitutes an event of default. Actual damages to the State of Utah for delay may be difficult or impossible to determine. Therefore, in lieu of actual damages, the vendor shall pay to the State of Utah, liquidated damages for each calendar day of delay, an amount of \$50.00, up to a maximum of 90 calendar days. Should the vendor be unable to complete the delivery before the end of the 90-day period, the State of Utah may, at its option, treat the contract as breached, terminate the contract, purchase substitute goods else-where, and charge any increase in cost and handling for such purchase to the defaulting vendor, and seek such additional relief as provided by law. The vendor shall not be charged for liquidated damages when delay arises out of causes beyond the control and without the

fault or negligence of the vendor.

Response Comply_____ Exceptions_____
DETAILED SPECIFICATIONS

This specification describes a heavy-duty, 4 x 4 truck chassis with snowblower attachment. The snow-blower shall be an auger type, with a minimum capacity of 2,400 tons per hour (at 150 feet casting) of 25 pound per cubic foot undisturbed snow up to 10,000 feet elevation. The blower shall be mounted on a 48,000 GVW minimum truck with an approximate wheelbase of 158". The vehicle shall comply with all applicable FMCSR and FMVSS quality/safety standards.

Bid response Comply_____ Exceptions_____

Operating Conditions:

This unit shall be designed to start and operate at altitudes of up to 10,000 feet or more in ambient temperatures of minus 40 degrees Fahrenheit, with full protection for all systems. It shall be capable of maintaining a minimum road speed of 55 mph. This unit will to be shared by two different U.D.O.T. Road Sheds. This will require the machine to travel for approximately 40 miles at a time on I-15 in southern Utah. This snowblower will eliminate the need to buy two machines.

Bid response Comply_____ Exceptions_____

Carrier Vehicle Section

Chassis The chassis shall be designed to permit easy and safe mounting and dismounting of the unit by operators and service personnel. All sheet metal, cowling, steps and fenders shall be free of sharp edges and protrusions. All steps or walkways shall be raised lug or expanded metal type construction. Grab bars shall be installed as required for safe mounting and dismounting by personnel. All sheet metal for cowling, shrouds and fenders shall include ample supports and bracing to prevent distortion and cracking. The engine shall be enclosed in a fabricated sheet metal housing of weatherproof design with butterfly opening for access to each side of engine. Fenders are require for the front tires and mud flaps are required for the rear tires.

Bid response Comply_____ Exceptions_____

Frame The frame shall be of Grade 8 bolted construction, with heat treated, 110,000 psi minimum yeild, straight single channel carbon manganese steel rails, connected by an adequate number of crossmembers to resist frame distortion from the lateral stress expected in this application. Minimum bar size shall be 12.375" X 3.875" X .375", with minimum 2,700,000 inch pound RBM per rail. The frame shall be the manufactures standard, 34" width minimum. There shall be four (4) tow hooks; two (2) mounted on the front and two (2) mounted on the rear of the vehicle. The Blower shall mount to an integral front frame extension beyond the radiator. FRAME LINERS, WRAPPERS, FISHPLATING, AND BOLT-ON EXTENSIONS ARE NOT ACCEPTABLE.

Other chassis equipment shall include mud flaps behind the front axle, and in front of and behind the rear axle. A 49,000 lb (minimum) pintle hitch is required at the rear of the unit. It shall be attached to the rear most cross member in the frame.

Outside of frame rails above the front driving axle shall be free of equipment that might be damaged by snow, ice, sand, mud or snow build up. This includes, but is not limited to fuel filters, fuel water separators, oil coolers, coolant filters, coolant hoses. Lubrication data plate shall be mounted on vehicle.

Bid response *Comply*_____ *Exceptions*_____

Engine The engine shall be of the four stroke diesel type, six (6) cylinder, minimum 12 liter nominal displacement, developing a minimum of 380 horsepower at 2100 RPM, and shall be equipped with latest diesel electronic control and engine management system, Caterpillar C-12. The engine shall have an automatic power derate system to protect against low oil pressure or high water temperature. The engine shall be provided with full flow, replaceable oil filters, dry type two stage air cleaner with selectable air intake, fuel filter, and emergency warning system with light and buzzer, in event of high water temperature and/or low oil pressure. Engine shall include a 1000 watt minimum block heater with 110 volt AC connection. Engine compression brake required. High idle switch and cruise control required.

Bid response *Comply*_____ *Exceptions*_____

Paint All metal surfaces shall be washed and dried prior to priming all surfaces and painting. If rusted, metal must be sand-blasted. All auxiliary items like hydraulic control boxes, tool boxes, etc must be painted before installation. The complete unit shall be painted to provide a minimum paint thickness of 4 mils minimum, and this shall be verified at time of delivery. No hydraulic hose, fitting or electrical connection shall be painted. Painting of areas where fittings or electrical connections are placed, shall be done prior to installation. Dealer's advertising shall be omitted. Warranty on paint will be considered in evaluating bids. The complete vehicle (fenders, doors, panel wells, underside of cab, fuel tanks, battery box, etc.) shall be treated with Class 1 rust proofing protection.

Paint process used

Paint warranty _____ *(Years)*

Bid response *Comply*_____ *Exceptions*_____

Cooling The cooling system shall consist of a HEAVY DUTY vertical flow radiator, with the top & bottom tanks and side members bolted together to form a rigid frame. The tanks shall be steel and the core shall be constructed of copper and brass. ALUMINUM RADIATORS ARE NOT ACCEPTABLE. A transmission cooler shall be located in the bottom tank. A Horton or equal thermostatically controlled, air operated disconnect type suction fan shall

be provided. The engine cooling system shall be filled with a permanent type antifreeze protecting the system to at least -40 degrees F. The system shall be sized to allow full operation of the vehicle without overheating. A spin on coolant system filter is required.

Bid response *Comply*____ *Exceptions*

Fuel System Shall have aluminum fuel tanks that will provide a minimum capacity of 225 gallons and be properly fastened to the frame. A four inch diameter filler neck with chain connected cap shall be provided. Fuel tanks shall be interconnected to allow equalized fuel level in all tanks. Crossover capacity shall allow single side fuel fill at a rate of 30 gpm minimum. Crossovers shall have shut off valves. In line 12 volt fuel heater, Racor Thermocoil or equal is required.

Fuel Tank Capacity

Bid response *Comply*____ *Exceptions*

Transmission The transmission shall be an Allison HD 4560, five-speed electronic control automatic, with a low gear ratio of 4.7:1, and shall be supplied with the appropriate torque converter for this application. Shifting shall be accomplished via a shift control within easy reach of the operator. LIGHT OR MEDIUM DUTY TRANSMISSIONS ARE NOT ACCEPTABLE. Transmission hot oil warning light and buzzer required.

Bid response *Comply*____ *Exceptions*

Transfer Case Transfer case shall be a two speed type with a bevel gear differential. Controls in cab shall allow the lockout of the differential action. The Hi-Lo range selection shall be accomplished through a mechanical linkage to assure positive engagement. The transfer case shall have a torque transmission capacity exceeding the maximum torque developed by the engine and transmission, and shall be approved for the application, and be manufactured by the chassis builder. Tapered roller bearings are required to support the shafts within the case.

Upper shaft and bearings shall be pressure lubricated by means of a lubrication pump driven by the top shaft of the transfer case. Pump shall be external to the case to facilitate maintenance throughout the life of the vehicle.

Bid response *Comply*____ *Exceptions*

Axles The front axle shall be drive/steer type, and of the full floating, torsion flow type with a single reduction spiral bevel gear design, minimum 25,000 pound GVW minimum hub and brake rating, minimum 10" ground clearance, and shall be capable of withstanding the loads of the unit being bid. For both axles the steering-drive wheel ends shall be removable and totally enclosed with a sealing ball and socket to protect the axle and

steering joints from dirt and slush. The trunnion pins shall be supported by pre-loaded tapered roller bearings to insure long life and smooth steering at all cramp angles.

Bid response *Comply*____ *Exceptions*

Steering Front axle steering shall be Sheppard integral hydraulic power assist gear type or equal. The steering gear shall be rated for heavy duty service. Four wheel steering shall be electronically coordinated through the standard steering wheel. A selector switch within easy reach of the operator shall provide the option of front steer only, crab steer, or coordinated front/rear steer. Additionally, a single axis joystick shall be provided for controlling rear steer only.

The system shall include safety provisions for dampening of all wheel steer effects at higher speeds, but it shall also allow full operation while the vehicle is moving at lower speeds. An indicator shall be provided in the cab to display the mode selected and rear wheel position. For safety purposes, there shall be a mechanical linkage maintained at all times between the steering wheel in the cab and the front axle to assure the ability to control the vehicle in the event of hydraulic or electrical system failure. Safety dampening of all wheel steer effects shall be related to vehicle speed, and all wheel steer shall be available in both transfer case ranges.

Bid response *Comply*____ *Exceptions*

Suspension Suspension shall include alloy steel springs of the semi-elliptical type, 25,000 pound minimum rating on the front axle, 23,000 pound minimum rating on the rear axle. The spring hangers, pins, and supports shall be heavy duty to insure long life. The pins shall be of the grease type with substantial bronze bushings. Shock absorbers required front and rear.

Bid response *Comply*____ *Exceptions*

Brakes The service brakes shall be fully air actuated, drum or disk and shoe type with a minimum 16 CFM air compressor and documented to conform with FMVSS 121 including a 4-sensor, 4-modulator ABS system. The parking brakes shall be spring actuated, air released at the rear service brake chambers, with the air switch mounted in easy reach of the operator. Both front and rear brakes shall be s-cam type. The air system shall be equipped with a heated Bendix ADIP or U.D.O.T. pre-approved equal air drier system.

Bid response *Comply*____ *Exceptions*

Wheels This unit shall be equipped with proper sized wheels and tires for the GVWR rating of the unit being bid, in compliance with National Wheel and Rim Association standards. Single Michelin XZL 395/85R20-20 ply or approved equal tires are required on all axles. The wheels shall be of the steel disc type with a 11.25" bolt circle minimum. Two spare, wheel

mounted, tires are required.

Bid response *Comply*____ *Exceptions*

Cab

The cab shall be a HEAVY DUTY two man type, all steel, galvanized exterior, 3-point mounted with air suspension, 72" wide minimum, fully insulated, one-piece reverse slope windshield, curb visibility window in right hand door, full width rear windows, tinted safety glass throughout. Piano type door hinges with stainless steel hinge pins the full height of the door are required shall provide(WHAT??) solid door mounts for the life of the vehicle. Complete rust proofing on all inside metal surfaces under 3/16" thick minimum. Floor mat, rubber or vinyl covering complete cab floor, fastened for easy removal, but securely held to floor. Additional padding under floor mat required. Tilt/Telescoping steering wheel, Bostrom Sierra Air 400RX (or approved equal) driver and passenger seats with retractable seat belts, driver=s seat with lumbar support. Heated West Coast type motorized mirrors and heated 8@ spotter mirrors required on both left and right. Dual sun visors, fresh air heater/defroster (25,000 BTU minimum), tubular side window defrosters with separate two-speed blower fan, two (2) dash mounted auxiliary defroster fans required. Dual electric windshield heated wipers installed above windshield with intermittent swipe feature, left and right door windows require heated wipers; Left and right outside grab handles, ash tray, cab mounted electric & air horns. For operator comfort, the engine shall not intrude into the cab envelope (no doghouse). An auxiliary heater is required under driver=s seat. AM/FM CD player required and tachometer with hour meter required.

Bid response *Comply*____ *Exceptions*

Electrical

System shall be 12-volt, and include a 160-amp alternator, three batteries, with minimum 2100 cold cranking amps at 0 degrees F (- 18 degrees C). Manual reset circuit breakers on all major circuits are required (fuses are not acceptable). At least two (2) blank circuit breakers required for DOT installed radios and/or electrical appurtenances, 20 amps each. Integral wiring for all cab-mounted and other lighting equipment, heavy duty rocker type light switches, positioned, labeled and illuminated for easy driver identification and use. Self canceling turn signal and emergency flasher control shall be mounted on steering column. Standard lighting to meet FMVSS requirements. Two cab roof mounted headlights and two fender mounted headlights with three-way switch to select upper or lower headlights. One set of fog lights also required. Doors and chassis engine ignition to be keyed alike. Two dome lights in cab required.

Right and left side spotlights (180 degree minimum vertical, 360 degree minimum horizontal control) with in-cab controls, mounted adjacent to windshield. Amber light bar Target Tech P/N 450112-02 (or approved equal) mounted on cab roof with a second on the rear engine enclosure to assure 360 degree visibility, tail, turn, clearance, back-up, and all other lighting, reflectors, etc. to be furnished and mounted on vehicle as required to comply with FMVSS. One set of High intensity discharge (HID) lights required, mounted high on radiator cowl. Engine compartment lights

required. Cole Hersee rotary disconnect switch required in the cab.
Provisions for jump start required on battery box. OEM rocker switch and wiring required for additional lighting on rear blower engine cowling.

Bid response *Comply*____ *Exceptions*

Snow Blower Section

Dimensions The cutting width shall be a minimum of 101 5/8". The cutting height shall be a minimum of 60". The height to the top of the cutter bars shall be a minimum of 87". The depth of the rotary head (front to back) should be a minimum of 50 2". Blower shall include turret loading and casting chute. The dimensions of the chute should be as follows:
Height from ground to top of tip section chute up tip up should be 145" minimum.
Height from ground to bottom edge of tip section chute up tip up 130" minimum.
Height from ground to bottom edge of tip section chute up tip down 120" minimum.
Height from base section to top of tip section chute retracted 76" minimum.
Height from ground to top chute retracted should be 125" maximum.

Bid response *Comply*____ *Exceptions*

General The snow removal capacity should be a minimum of 2400 tons per hour. The snow casting distance shall be a minimum of 175'. The blower shall have a complete two stage design.

Bid response *Comply*____ *Exceptions*

Rotary Frame The frame shall have heavy steel plate and structural members with a 10 gauge back plate minimum, 5/16" steel plate minimum side plate on left, 9/16" steel plate minimum side plate on right side with the right side designed for flat discharge. It shall include a high carbon steel scraper blade(replaceable), alloy steel wear shoes and wear plates that includes two end wear plates, two end wear shoes, two center wear plates(adjustable) with 188 square inches of wear surface. Shall include high carbon steel cutter bars. The attaching frame shall be constructed of heavy steel designed to adapt to chassis. The lift gear shall be a complete hydraulic design controlled from the cab. The strut components (push frame) shall be constructed from heavy channel fastened to chassis frame for strength.

Bid response *Comply*____ *Exceptions*

Augers Shall include three, 18" diameter augers minimum. The center and bottom auger: full height 5/16 flight minimum, 5.50 inch O.D. minimum. Top auger shall have a tapered flight 5/16" minimum with 4.50" O.D. minimum. All augers should be mounted on self aligning bearings. The auger drive shall be shear bolt protected with two bolts required. Shall include a 1.750"

diameter alloy shaft minimum. Shall include a flexible coupling that is shock load protected. Shall include ice chippers. 2 auger design that will meet the minimum performance will be considered acceptable.

Bid response *Comply*____ *Exceptions*

Gear Case Shall include a cast iron housing that is machined to tolerance. All shafts and gears specially designed of alloy steel. The fan shaft diameter shall be a minimum of 3". The input shaft should be a minimum of 2" in diameter. The output shaft should be a minimum of 1.75" diameter. The chain idler should be adjustable for the proper tension.

Bid response *Comply*____ *Exceptions*

Impeller The impeller weldment shall be made of heavy duty steel and a minimum of 41" in diameter. The impeller shall be shear bolt protected with a minimum of 3 bolts. Shall have 6 alloy steel replaceable fan blades, with a heavy steel fan housing made out of 3/16" steel plate minimum. The fan housing throat size shall be a minimum of 16" in diameter. The fan housing shall rotate through an arc of 130E controlled from the cab. Snow stream direction of elevation can be instantly changed w/o stopping or interrupting operation.

Bid response *Comply*____ *Exceptions*

Aux. Engine The auxiliary engine shall be a Caterpillar C-12(minimum) 425 HP @ 2100 RPM turbo charged diesel engine with a minimum of 732 cubic inch displacement, and a minimum of 1350 foot pounds of torque @ 1400 RPM. Shall include a weather proof enclosure with removable doors for easy access. Shall include a dry type air cleaner with electric throttle control and low oil and high temperature automatic engine shutdowns.

Bid response *Comply*____ *Exceptions*

Clutch(PTO) Shall have a double plate over center design. Shall be a 14" clutch with a clutch shaft 4.125" in diameter that is controlled in the cab.

Bid response *Comply*____ *Exceptions*

Transmission Shall be a high velocity inverted tooth chain running in an oil bath inside of a oil tight welded steel case with an adjustment to obtain proper adjustment on chain. The drive lines are to have a double universal joint assemblies. The drive line shall be from the output on transmission to the rotary head.

Bid response *Comply*____ *Exceptions*

Hydraulics Shall be a minimum of 9.8 gallons with a sight level gauge, full flow filtration with a vane type hydraulic pump that is engine

mounted. NO BELTS.
The system should be
designed to operate at
temperatures of -40E
and all functions
should be controlled
from the cab.

Bid response *Comply*____ *Exceptions*

Electrical Shall be a 12 volt system with a negative ground, circuit breaker protection, two 12 volt 900 minimum cold cranking amp heavy duty batteries with a quick disconnect as well as a shut off switch.

Bid response *Comply*____ *Exceptions*

Fuel System Shall be a common system with chassis, fuel filter, and a shutoff valve at the bottom of the tank. The filling of the tank shall be accomplished at the top of the tank and shall include a fuel gauge in the cab.

Bid response *Comply*____ *Exceptions*

Instrumentation Shall include a tachometer, oil pressure gauge, hour meter, water temperature gauge, ammeter, starter switch, fuel gauge, dash light, turret loader control switches, electric throttle control switch, and an automatic shutdown switch.

Bid response *Comply*____ *Exceptions*

Turret loading/

Casting chute Casting chute to be able to load into a 8' high dump bed.

All controls mounted in the cab of carrier for complete operation. All hydraulic hose and fittings designed for -40E temperature with all electric wiring protected by heavy duty wiring loom.

Snow stream can be directed to either side of rotary unit without going through turret loading chute.

Bid response *Comply*____ *Exceptions*

Option #1 Extend warranty of whole unit to 2 years.

Bid response *Option price*_____ *Not available*

Option #2 Have 20 shear pin=s for the augers.

Bid response *Option price*_____ *Not available*

Option #3 Electrically heated side windows.

Bid response *Option price*_____ *Not available*

Option #4 Monitor and camera system, for rear viewing.

Bid response Option price_____ *Not available*

Option #5 AM - FM CD radio, with weather band.

Bid response Option price_____ *Not available*

TRAINING The vendor shall provide one day of training, at U.D.O.T. facility, on operation and maintenance of the snowblower.

DELIVERY

Complete delivery must occur on or before 210 days after receipt of order. Delivery date will be considered in evaluating bids.

Delivery must include the following to be considered as complete:

- dealer's invoice
- a copy of warranty
- operator's manual for each unit
- 3 complete sets of manuals including:
parts list, repair manual, operator's manual.
- Delivery must also include MSO, application for title and safety inspection. All documentation shall show owner/purchaser as **STATE OF UTAH.**

PRODUCT REVIEW

A pilot review will be required at manufacturer=s factory for acceptance of completed unit at 90% completion.

Expenses for two U.D.O.T. representatives for the pilot review shall be included in bid.

Cost of manuals shall be included in bid price.

Invoices will not be approved for payment until all documentation and manuals have been received.

Delivery shall be F.O.B. Destination, Equipment Operations, Utah Dept. of Transportation, Central Shops, 4501 South 2700 West, Salt Lake City, Utah 84114-5730.
Call Prep Shop Coordinator, 964-4550, for instructions before delivery.

For information about specifications, contact Jeff Casper, U.D.O.T. Equipment Specialist (801-965-4933), E-Mail JeffCasper@Utah.gov at the above address.